

## **Phase Three: Data Collection and Analysis**

### **Data Analysis Report**

# **Total Maximum Daily Load for Pathogens in Aptos Creek, Santa Cruz County, California**

**April 2005**

Central Coast Regional Water Quality Control Board  
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## 1. PROJECT DEFINITION

### 1.1. Beneficial Uses

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The California Regional Water Quality Control Board (Regional Board) is responsible for protecting water resources from pollution and nuisance that may occur as a result of waste discharges. The Regional Board determines beneficial uses (in the *Water Quality Control Plan* (Basin Plan)) that need protection. The Regional Board adopted water quality objectives that are necessary to protect the beneficial water uses in the Basin Plan.

Aptos Creek beneficial uses cited in the Basin Plan are: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Ground Water Recharge (GWR); Contact and Non-Contact Recreation (REC-1 and REC-2); Wildlife Habitat (WILD); Cold Freshwater Habitat (COLD); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Preservation of Biological Habitats of Special Significance (BIOL); Estuarine Habitat (EST); Freshwater Replacement (FRSH); and Commercial and Sport Fishing (COMM).

### 1.2. Problem Statement

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Aptos Creek fecal coliform exceeds the REC-1 water quality objectives. Regional Board staff utilized Aptos Creek water quality data collected by the Santa Cruz County Environmental Health Services to determine this objective exceedence.

## 2. NUMERIC TARGET

The most stringent water quality objective applies to the water contact recreation beneficial use. The Basin Plan contains the following REC-1 bacteria objective:

“Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.”

Often, available datasets do not contain five samples in a 30-day period, so the portion of the objective that is evaluated is that “no more than ten percent of total samples during any 30-day period exceed 400 /100 mL.” One can note that, in instances where fewer than five samples were collected in 30 days, the “ten percent” threshold is exceeded if any one sample exceeds 400 / 100 mL.

**Table 1. Numeric Targets for Aptos Creek**

<b>Fecal Coliform</b>	
<b>Geometric Mean</b>	<b>Maximum</b>
200 MPN/100 mL <sup>a</sup>	400 MPN/100 mL <sup>b</sup>

<sup>a</sup> Based on not less than five samples for any 30-day period

<sup>b</sup> No more than 10% of total samples during any 30-day period

### 3. DATA ANALYSIS

Santa Cruz County sampling activities for Aptos Creek are shown in the Table below.

**Table 2. Santa Cruz County Environmental Health Services Sampling Activity Since January 1, 2000**

<b>Station</b>	<b>Number of Samples</b>	<b>Frequency</b>	<b>Period of Record</b>
Aptos Creek at Mouth	311	Approximately weekly	1/5/2000 to 3/21/2005
Aptos Creek at the Spreckles Bridge	16	Infrequent	2/15/2000 to 2/3/2005
Aptos Creek above Valencia Creek	68	Approximately monthly	2/1/2000 to 3/8/2005

#### **Aptos Creek at Mouth Fecal Coliform Geometric Mean Standard**

Figure 1 shows monthly Aptos Creek fecal coliform concentrations at the creek mouth from 1/5/2000 to 3/21/2005. The graph displays the REC-1 geometric mean standard. Concentration ranges, the range of concentrations within the 25<sup>th</sup>-75<sup>th</sup> percentile range, the mean concentration, and the median concentration are shown. Fecal coliform violations occurred every month. Mean fecal coliform concentrations exceed the standard in February and June through December. Median fecal coliform concentrations exceed the standard in June, July, and October through December.

**Figure 1. Aptos Creek Fecal Coliform at Mouth (#/100 mL) and Water Contact Recreation Geometric Mean Standard (January 5, 2000 – March 21, 2005)**

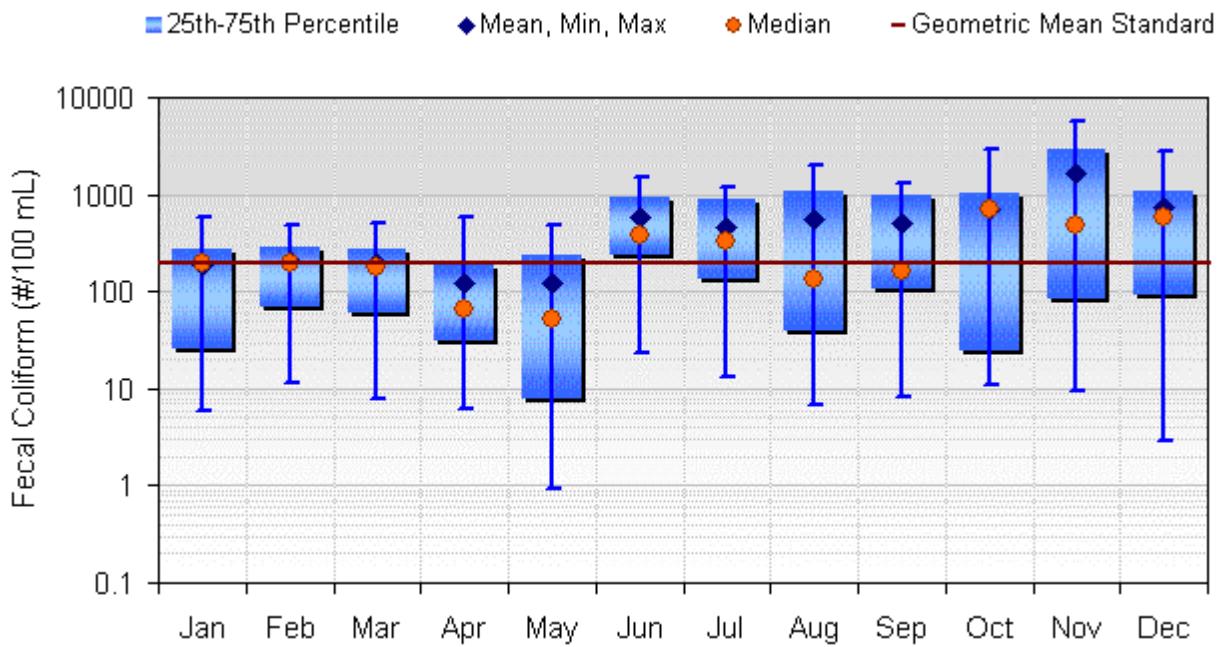


Table 3 below provides a summary of data from 1/5/2000 to 3/21/2005 as represented in Figure 1. The table summarizes data on a monthly basis and presents the mean, median, minimum, maximum, the 25<sup>th</sup> percent deviation, the 75<sup>th</sup> percent deviation, the number of exceedences of the water contact recreation geometric mean standard versus the sample count (XS:Count), and the percent sample exceedence (XS%) of the REC geometric mean standard. Overall, the water contact recreation water quality objective was exceeded 50% of the time with no apparent seasonal trend.

**Table 3. Aptos Creek Fecal Coliform at Mouth Data Summary (#/100 mL) and Exceedence of Water Contract Recreation Geometric Mean Standard**

Summary Statistics ( Data: 1/5/2000 to 3/21/2005 )								
Month	Mean	Median	Min	Max	25th	75th	XS:Count	XS%
Jan	186	195	6	586	26	271	10:20	50%
Feb	207	198	11	487	68	286	13:28	46%
Mar	200	182	8	508	61	270	14:30	47%
Apr	120	66	6	571	31	184	3:25	12%
May	123	52	1	482	8	232	10:27	37%
Jun	590	383	23	1514	232	957	11:14	79%
Jul	451	333	13	1190	133	881	11:21	52%
Aug	552	133	7	1977	39	1057	13:27	48%
Sep	500	160	8	1306	104	1000	7:15	47%
Oct	713	692	11	2980	24	1030	13:20	65%
Nov	1618	484	10	5732	85	2969	21:30	70%
Dec	725	589	3	2820	94	1094	15:24	63%
<b>All Data</b>	<b>506</b>	<b>207</b>	<b>1</b>	<b>5732</b>	<b>43</b>	<b>502</b>	<b>141:281</b>	<b>50%</b>

**Aptos Creek at Mouth Fecal Coliform Maximum Standard**

Figure 2 below shows monthly Aptos Creek fecal coliform concentrations at the creek mouth from 1/5/2000 to 3/21/2005. The graph displays the water contact recreation maximum standard. Concentration ranges, the range of concentrations within the 25<sup>th</sup> - 75<sup>th</sup> percentile range, the mean concentration, and the median concentration are shown. Mean fecal coliform concentrations exceed the standard in January, February, and May through December. Median fecal coliform concentrations exceed the standard in May through December.

**Figure 2. Aptos Creek Fecal Coliform at Mouth (#/100 mL) and Water Contact Recreation Maximum Standard (January 5, 2000 – March 21, 2005)**

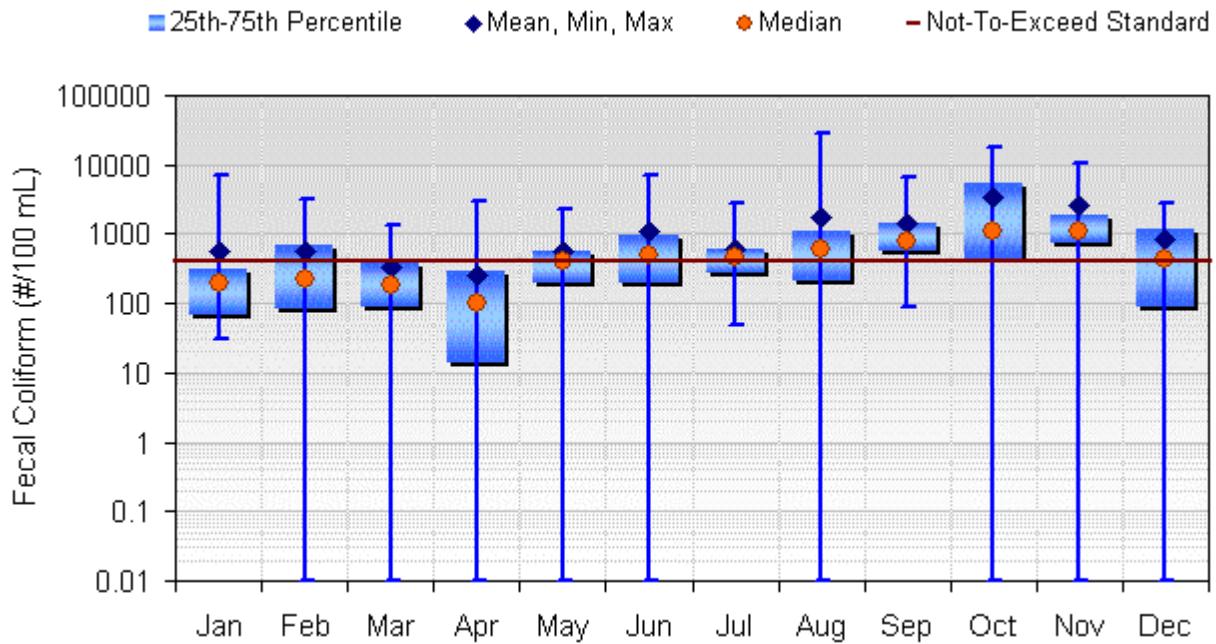


Table 4 summarizes the above figure. The table analyzes data on a monthly basis. The table presents the mean, median, minimum, maximum, the 25<sup>th</sup> percent deviation, the 75<sup>th</sup> percent deviation, the number of exceedences versus the sample count (XS:Count), and the percent sample exceedence (XS%). Overall, the water quality objective was exceeded 49% of the time with no apparent seasonal trend.

**Table 4. Aptos Creek Fecal Coliform at Mouth Data Summary (#/100 mL) and Water Contact Recreation Maximum Standard**

Summary Statistics ( Data: 1/5/2000 to 3/21/2005 )								
Month	Mean	Median	Min	Max	25th	75th	XS:Count	XS%
Jan	556	190	30	7020	68	303	5:28	18%
Feb	559	220	0	3100	85	708	11:30	37%
Mar	326	185	0	1300	88	390	7:28	25%
Apr	261	104	0	2950	14	290	5:30	17%
May	580	410	0	2250	200	576	11:21	52%
Jun	1073	490	0	7160	203	980	13:24	54%
Jul	608	452	50	2850	265	622	12:23	52%
Aug	1773	614	0	28800	215	1088	16:28	57%
Sep	1402	800	90	6650	560	1415	17:19	89%
Oct	3296	1135	0	17700	441	5288	24:32	75%
Nov	2591	1095	0	10200	743	1888	19:22	86%
Dec	840	435	0	2790	88	1148	13:26	50%
<b>All Data</b>	<b>1163</b>	<b>390</b>	<b>0</b>	<b>28800</b>	<b>120</b>	<b>980</b>	<b>153:311</b>	<b>49%</b>

#### **Aptos Creek at Spreckles Bridge Fecal Coliform Maximum Standard**

Figure 3 below shows monthly Aptos Creek fecal coliform concentrations at the Spreckles Bridge from 2/15/2000 to 2/03/2005. The graph displays the water contact recreation maximum standard. Concentration ranges, the range of concentrations within the 25<sup>th</sup> -75<sup>th</sup> percentile range, the mean concentration, and the median concentration are shown. (There was not enough data at this station to calculate geometric mean.) There are insufficient samples at this station to determine if an impairment condition exists.

**Figure 3. Aptos Creek Fecal Coliform at Spreckles Bridge (#/100 mL) and Water Contact Recreation Maximum Standard (February 15, 2000 to February 3, 2005 )**

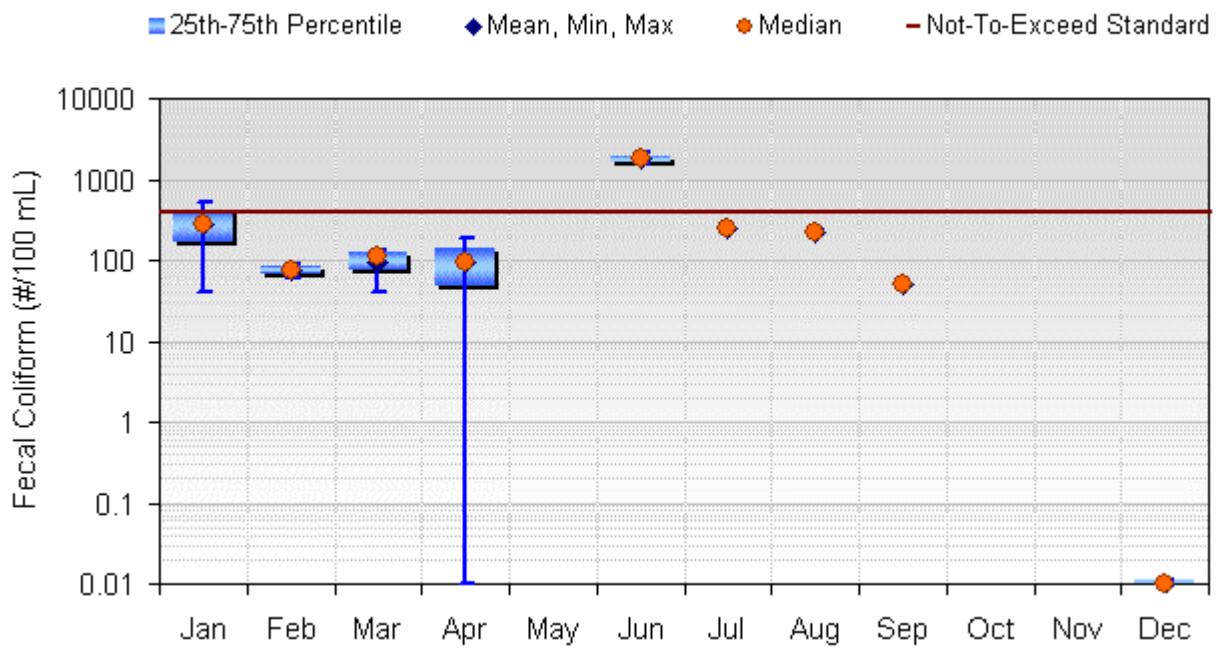


Table 5 summarizes the above figure. The table analyzes data on a monthly basis. The table presents the mean, median, minimum, maximum, the 25<sup>th</sup> percent deviation, the 75<sup>th</sup> percent deviation, the number of exceedences of the water contact recreation maximum standard versus the sample count (XS:Count), and the percent sample exceedence (XS%) of the standard. Overall, the water contact recreation water quality objective was exceeded 19% of the time.

**Table 5. Aptos Creek Fecal Coliform at Spreckles Bridge Data Summary (#/100 mL) and Water Contact Recreation Maximum Standard**

Summary Statistics ( Data: 2/15/2000 to 2/3/2005 )								
Month	Mean	Median	Min	Max	25th	75th	XS:Count	XS%
Jan	285	285	40	530	163	408	1:2	50%
Feb	75	75	60	90	68	83	0:2	0%
Mar	95	110	40	135	75	123	0:3	0%
Apr	95	95	0	190	48	143	0:2	0%
May	0	0	0	0	0	0	0:0	n/a
Jun	1800	1800	1500	2100	1650	1950	2:2	100%
Jul	250	250	250	250	250	250	0:1	0%
Aug	225	225	220	230	223	228	0:2	0%
Sep	50	50	50	50	50	50	0:1	0%
Oct	0	0	0	0	0	0	0:0	n/a
Nov	0	0	0	0	0	0	0:0	n/a
Dec	0	0	0	0	0	0	0:1	0%
All Data	347	123	0	2100	48	235	3:16	19%

**Aptos Creek Above Valencia Creek Fecal Coliform Maximum Standard**

Figure 4 below shows monthly Aptos Creek fecal coliform data above Valencia Creek from 2/1/2000 to 3/8/2005. The graph displays the water contact recreation maximum standard. The graph displays concentration ranges, the range of concentrations within the 25<sup>th</sup>-75<sup>th</sup> percentile range, the mean concentration, and the median concentration. (There was not enough data at this station to calculate geometric mean.) The mean and median fecal coliform concentrations attain the water quality objective all months of the year.

**Figure 4. Aptos Creek Fecal Coliform above Valencia Creek (#/100mL) and Water Contact Recreation Maximum Standard (February 1, 2000 to March 8, 2005)**

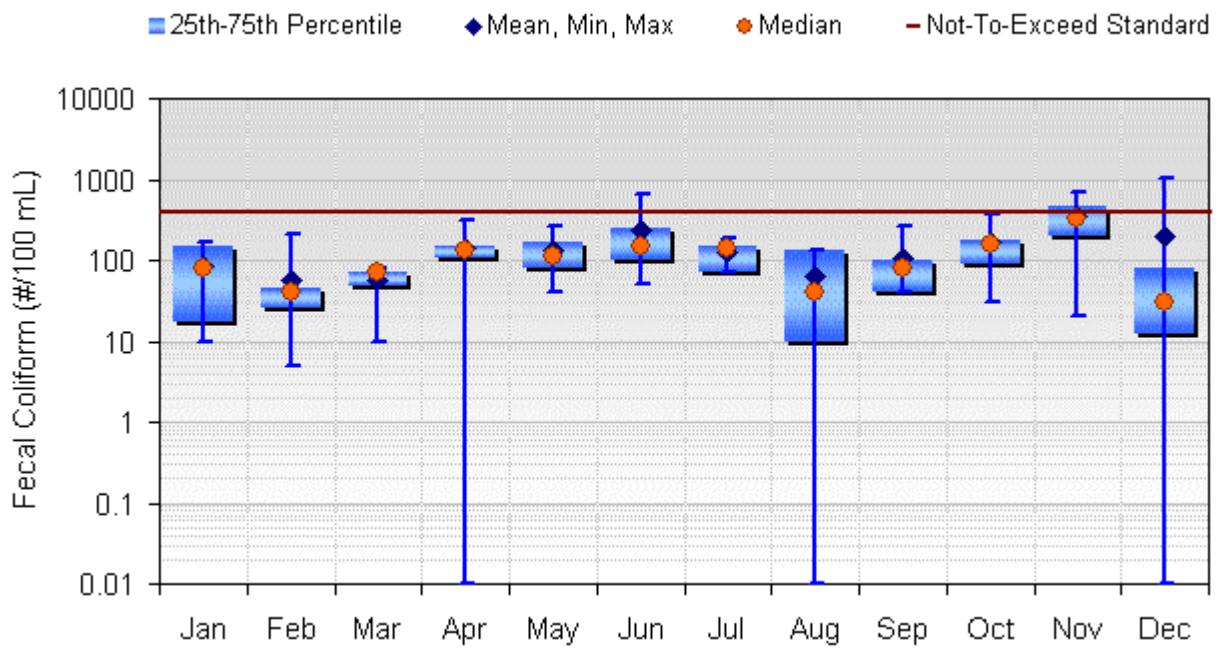


Table 6 below summarizes the above figure. The table analyzes data on a monthly basis. The table presents the mean, median, minimum, maximum, the 25<sup>th</sup> percent deviation, the 75<sup>th</sup> percent deviation, the number of exceedences versus the sample count (XS:Count), and the percent sample exceedence (XS%). Overall, the water quality objective was exceeded 6% of the time. Only four samples exceeded the water quality objective.

**Table 6. Aptos Creek Fecal Coliform above Valencia Creek Data Summary (#/100mL)**

Summary Statistics ( Data: 2/1/2000 to 3/8/2005 )								
Month	Mean	Median	Min	Max	25th	75th	XS:Count	XS%
Jan	85	80	10	170	18	148	0:4	0%
Feb	56	40	5	210	25	45	0:7	0%
Mar	57	70	10	80	48	70	0:6	0%
Apr	138	130	0	320	108	145	0:6	0%
May	132	115	40	270	80	165	0:6	0%
Jun	238	150	50	640	100	250	2:9	22%
Jul	124	140	70	190	72	150	0:5	0%
Aug	62	40	0	132	10	130	0:5	0%
Sep	104	80	40	260	40	100	0:5	0%
Oct	166	160	30	370	90	180	0:5	0%
Nov	348	330	20	710	200	478	1:4	25%
Dec	202	30	0	1050	13	78	1:6	17%
All Data	<b>143</b>	<b>90</b>	<b>0</b>	<b>1050</b>	<b>40</b>	<b>163</b>	<b>4:68</b>	<b>6%</b>

### **3.1. DNA Fingerprinting**

Santa Cruz County collected water column samples at two sites within the lower reach of Aptos Creek. The sites are Aptos Creek at the Mouth and Aptos Creek at Spreckles Bridge. DNA fingerprinting analysis was performed using the ribotyping method and Dr. Mansour Samadpour of the University of Washington completed the analysis. Dr. Samadpour has a library of over 100,000 fingerprints used to identify *E.coli* sources.

DNA fingerprinting results are shown below. The greatest *E.coli* source at both stations is birds. Wildlife is also a significant source.

### 3.2. Source Categories

**Table 7. Microbial Source Identification Results 2003-04**

Location	Totals	Overall Occurrence	Aptos Cr @ Mouth	Aptos Cr @ Spreckles
Total Samples	20	11	9	
Total Isolates	193	109	89	
Log mean Fecal Coliform (cfu/100ml)		553	375	
Bird	118	59.6%	64.2%	53.9%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		355	202
Cat	1	0.5%	0.9%	0.0%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		5	0
Cow	0	0%	0.0%	0.0%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		0	0
Dog	17	8.6%	6.4%	11.2%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		36	42
Horse	0	0%	0.0%	0.0%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		0	0
Rodent	20	10.1%	9.2%	11.2%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		51	42
Marine Mammal	0.	0%	0.0%	0.0%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		0	0
Unknown	10	5.1%	6.4%	3.4%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		36	13
Wildlife	30	15.1%	11.0%	20.2%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		61	76
Human	2	1.0%	1.8%	0.0%
	Portion of Log Mean Fecal Coliform (cfu/100ml)		10	0

## **4. CONCLUSIONS AND RECOMMENDATIONS**

This section provides conclusions and recommendations resulting from the above information

### **4.1. Conclusions**

1. Aptos Creek is impaired at the river mouth.
2. A Total Maximum Daily Load (TMDL) is necessary for Aptos Creek.
3. There is insufficient information to determine if Aptos Creek is impaired at the Spreckles Bridge station.
4. A TMDL may not be necessary for Aptos Creek above Valencia Creek.

### **4.2. Recommendations**

1. The County should monitor Aptos Creek at the Spreckles Bridge at least monthly to determine impairment conditions at this station.
2. The County should monitor Aptos Creek above Valencia Creek at least monthly to determine impairment conditions at this station.

**APPENDIX. APTOS CREEK WATER QUALITY DATA**

APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)	APOTOS C @ BRIDGE ON SPRECKLES	Fecal Coliform (#/100 mL)	APOTOS C @ VALENCIA C	Fecal Coliform (#/100 mL)
05-Jan-00	60	15-Feb-00	60	01-Feb-00	50
10-Jan-00	100	01-Mar-00	110	13-Mar-00	10
26-Jan-00	7020	13-Apr-01		09-May-00	80
31-Jan-00	280	03-Dec-03		14-Jun-00	240
01-Feb-00	440	21-Jan-04	530	27-Jun-00	640
07-Feb-00	220	09-Mar-04	40	29-Jun-00	250
14-Feb-00	25	23-Mar-04	135	05-Jul-00	190
24-Feb-00	100	28-Apr-04	190	08-Aug-00	10
27-Feb-00	180	15-Jun-04	1500	19-Sep-00	260
08-Mar-00	1128	16-Jun-04	2100	09-Oct-00	90
09-Mar-00	216	19-Jul-04	250	11-Dec-00	10
13-Mar-00	170	02-Aug-04	220	05-Feb-01	40
22-Mar-00	220	18-Aug-04	230	06-Mar-01	70
27-Mar-00	150	21-Sep-04	50	02-Apr-01	150
03-Apr-00	824	25-Jan-05	40	13-Apr-01	
10-Apr-00	108	03-Feb-05	90	18-Apr-01	320
11-Apr-00	108			07-May-01	80
17-Apr-00	200			04-Jun-01	50
26-Apr-00	72			02-Jul-01	150
02-May-00	576			07-Aug-01	130
09-May-00	470			05-Sep-01	100
17-May-00	140			09-Oct-01	370
23-May-00	410			18-Oct-01	180
31-May-00	140			05-Nov-01	710
14-Jun-00	180			11-Dec-01	
20-Jun-00	960			12-Dec-01	40
27-Jun-00	510			14-Jan-02	170
05-Jul-00	280			11-Feb-02	20
11-Jul-00	644			11-Mar-02	70
18-Jul-00	280			08-Apr-02	100
25-Jul-00	160			14-May-02	40
02-Aug-00	390			11-Jun-02	490
08-Aug-00	390			09-Jul-02	140
15-Aug-00	550			14-Aug-02	40
21-Aug-00	140			19-Sep-02	40
29-Aug-00	240			12-Nov-02	260
11-Sep-00	490			09-Dec-02	1050
18-Sep-00	1050			13-Jan-03	140
25-Sep-00	680			10-Feb-03	40
02-Oct-00	8240			12-Mar-03	80
09-Oct-00	1490			08-Apr-03	130
				12-May-03	150
				09-Jun-03	130

APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)	APOTOS C @ VALENCIA C	Fecal Coliform (#/100 mL)
16-Oct-00	1140	19-Jun-03	150
18-Oct-00		07-Jul-03	70
19-Oct-00	740	13-Aug-03	
24-Oct-00		08-Sep-03	80
25-Oct-00	1660	09-Oct-03	160
30-Oct-00	4650	10-Nov-03	400
06-Nov-00	10000	08-Dec-03	90
13-Nov-00	1610	12-Jan-04	20
22-Nov-00	830	08-Feb-04	5
27-Nov-00	1080	09-Feb-04	30
05-Dec-00	10	08-Mar-04	40
11-Dec-00	140	13-Apr-04	130
18-Dec-00	60	10-May-04	270
26-Dec-00	150	12-May-04	170
02-Jan-01	300	08-Jun-04	100
08-Jan-01	1930	17-Jun-04	90
16-Jan-01	970	12-Jul-04	72
18-Jan-01	60	09-Aug-04	132
22-Jan-01	30	14-Sep-04	40
29-Jan-01	150	12-Oct-04	30
05-Feb-01	350	09-Nov-04	20
13-Feb-01	3100	13-Dec-04	20
20-Feb-01	220	10-Jan-05	10
26-Feb-01	230	07-Feb-05	210
06-Mar-01	580	08-Mar-05	70
12-Mar-01	220		
19-Mar-01	890		
26-Mar-01	1300		
02-Apr-01	410		
09-Apr-01	2950		
16-Apr-01	160		
23-Apr-01	550		
30-Apr-01	300		
07-May-01	240		
21-May-01	2070		
30-May-01	200		
04-Jun-01	290		
13-Jun-01	210		
02-Jul-01	900		
09-Jul-01	960		
11-Jul-01	390		
17-Jul-01	950		
24-Jul-01	110		
01-Aug-01	1480		

APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)	APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)	APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)
06-Aug-01	1260	17-Jun-02	60	05-May-03	220
13-Aug-01	930	25-Jun-02	250	12-May-03	120
20-Aug-01	1730	01-Jul-02	130	19-May-03	1616
27-Aug-01	1030	09-Jul-02	316	27-May-03	480
05-Sep-01	800	17-Jul-02	250	02-Jun-03	210
10-Sep-01	740	23-Jul-02	50	09-Jun-03	1100
17-Sep-01	1200	29-Jul-02	80	16-Jun-03	800
24-Sep-01	90	05-Aug-02	100	23-Jun-03	390
09-Oct-01	1070	13-Aug-02	250	30-Jun-03	830
10-Oct-01	1170	20-Aug-02	1777	07-Jul-03	350
15-Oct-01	8680	27-Aug-02	640	14-Jul-03	480
22-Oct-01	690	04-Sep-02	910	21-Jul-03	560
29-Oct-01	10000	19-Sep-02	2460	28-Jul-03	480
30-Oct-01	17700	23-Sep-02	550	19-Aug-03	730
05-Nov-01	1430	01-Oct-02	1580	26-Aug-03	790
13-Nov-01	7080	07-Oct-02	620	02-Sep-03	620
19-Nov-01	10000	17-Oct-02	870	08-Sep-03	3940
26-Nov-01	1980	21-Oct-02	890	22-Sep-03	6650
03-Dec-01	890	28-Oct-02	190	29-Sep-03	1630
10-Dec-01	570	05-Nov-02	310	06-Oct-03	10180
17-Dec-01	990	12-Nov-02	750	14-Oct-03	1130
26-Dec-01	110	19-Nov-02	640	20-Oct-03	1260
07-Jan-02	240	25-Nov-02	270	28-Oct-03	1350
14-Jan-02	180	02-Dec-02	540	03-Nov-03	10200
22-Jan-02	30	09-Dec-02	2560	10-Nov-03	1110
28-Jan-02	200	17-Dec-02	1200	17-Nov-03	610
04-Feb-02	5	23-Dec-02	330	24-Nov-03	910
11-Feb-02	80	30-Dec-02	80	01-Dec-03	2660
19-Feb-02	610	06-Jan-03	70	08-Dec-03	990
25-Feb-02	180	13-Jan-03	200	15-Dec-03	230
04-Mar-02	10	21-Jan-03	230	22-Dec-03	890
11-Mar-02	360	28-Jan-03	660	29-Dec-03	2790
18-Mar-02	20	03-Feb-03	420	05-Jan-04	400
25-Mar-02	50	10-Feb-03	20	12-Jan-04	40
02-Apr-02	60	18-Feb-03	170	20-Jan-04	60
08-Apr-02	60	24-Feb-03	1350	21-Jan-04	1280
16-Apr-02	40	03-Mar-03	250		
24-Apr-02	5	11-Mar-03	100		
29-Apr-02	40	17-Mar-03	270		
06-May-02	790	24-Mar-03	80		
14-May-02	140	01-Apr-03	100		
21-May-02	500	07-Apr-03	260		
28-May-02	370	21-Apr-03	350		
03-Jun-02	720	29-Apr-03	550		
11-Jun-02	140				

APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)	APOTOS CREEK @ MOUTH	Fecal Coliform (#/100 mL)
26-Jan-04	110	28-Sep-04	560
02-Feb-04	1730	04-Oct-04	525
08-Feb-04	740	12-Oct-04	7200
09-Feb-04	260	18-Oct-04	7350
17-Feb-04	780	26-Oct-04	15100
23-Feb-04	120	01-Nov-04	950
01-Mar-04	660	09-Nov-04	1425
08-Mar-04	200	15-Nov-04	1560
09-Mar-04	30	23-Nov-04	740
22-Mar-04	120	29-Nov-04	3525
23-Mar-04	110	09-Dec-04	2600
29-Mar-04	480	13-Dec-04	140
05-Apr-04	190	21-Dec-04	1950
13-Apr-04	300	27-Dec-04	1950
19-Apr-04	70	04-Jan-05	50
26-Apr-04	120	10-Jan-05	180
03-May-04	2250	18-Jan-05	260
10-May-04	300	24-Jan-05	160
17-May-04	620	25-Jan-05	310
24-May-04	520	01-Feb-05	1340
01-Jun-04	3030	03-Feb-05	80
08-Jun-04	2910	07-Feb-05	1000
14-Jun-04	860	15-Feb-05	2880
15-Jun-04	1040	22-Feb-05	140
16-Jun-04	7160	01-Mar-05	120
22-Jun-04	180	08-Mar-05	90
24-Jun-04	470	15-Mar-05	70
28-Jun-04	3440	21-Mar-05	1220
06-Jul-04	600		
12-Jul-04	452		
19-Jul-04	480		
20-Jul-04	2225		
26-Jul-04	2850		
02-Aug-04	2160		
03-Aug-04	28800		
09-Aug-04	628		
16-Aug-04	340		
18-Aug-04	800		
23-Aug-04	3900		
30-Aug-04	600		
07-Sep-04	2540		
14-Sep-04	800		
20-Sep-04	560		
21-Sep-04	370		